



ST JOSEPH'S INSTITUTION
END OF YEAR EXAMINATION 2018
(YEAR 1)

GEOGRAPHY

28 September 2018
1 hour 45 mins
(0800 – 0945 hr)

Additional Materials: Writing Paper
Rubrics
Topographic Map

READ THESE INSTRUCTIONS FIRST

Write your class, index number and name on all the work you hand in.
Write in dark blue or black pen on both sides of the paper.
You may use a soft pencil for any diagrams.
Do not use paper clips, glue or correction fluid.

Section A: Answer **ALL** questions.
Section B: Answer **ALL** questions.
Section C: Answer the question.

Start **ALL Sections** on a new sheet of **Writing Paper**.

At the end of the examination, hand in **ALL Sections separately**.
The number of marks is given in brackets [] at the end of each question or part question.

This document consists of **12** printed pages, including the cover page and Rubrics.

[TURN OVER]

SECTION A: (10 marks)

Topographical Map Reading

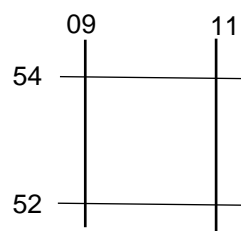
Answer **ALL** questions.

1. Study the map extract of Rusape, Zimbabwe.

(a) State the scale of the map. [1]

- 1: 50 000 or 2cm represents 1km

(b) Identify **two** physical features located in the grid squares as shown below. [2]



- Sparse bush
 - River
 - Rapids
- [Any 2 points]

(c) Identify the main economic activity found around Rusape. Give map evidence to support your answer. [2]

- Cultivation [1]
- Dominates large tracts of the land on the western part of the map and scattered throughout the map [1]

(d) Identify the types of roads found in grid square 0849. [2]

- Wide tarred road [1]
- Gravel or Earth road [1]

(e) Look at the bridge where the railway crosses the Rusape River.

(i) State the six-figure grid reference of the bridge. [1]

- 076524 (± 1 on the 3rd and 6th digits)

(ii) In which direction is Chenaka School (0047) from the bridge? [1]

- South-west

(f) Study the main settlement of Rusape. Medical services like a hospital and hotel are marked on the map. Identify **one** other service or function found at the settlement. [1]

- Postal services, eg. Post Office,
- Recreational services, eg. club
- Security services, eg. Police Station

SECTION B: (32 marks)

Data Response Questions (4 x 8 marks)

Answer **ALL** questions.

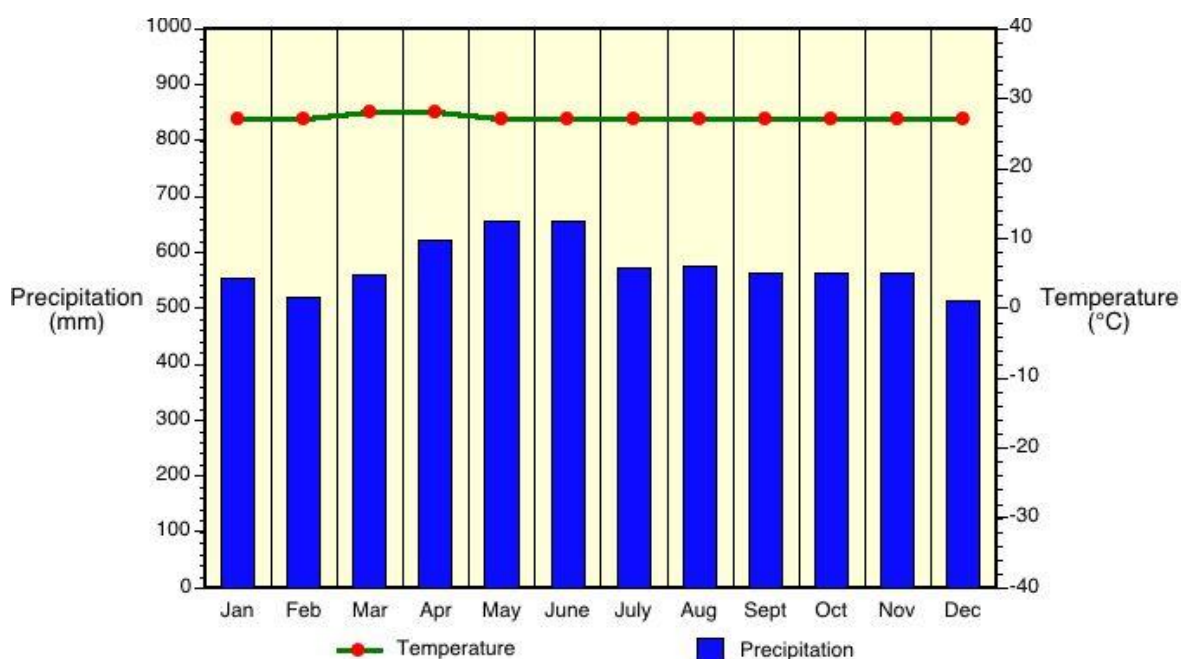
2. Figures 1A and 1B show the temperatures and precipitation of Andagoya, Colombia over a period of a year.

Fig. 1A

Andagoya*, Colombia (Latitude – 5°N, Elevation – 65 metres)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temp. (°C)	27	27	28	28	27	27	27	27	27	27	27	27
Precip (mm)	554	519	557	620	655	655	572	574	561	563	563	512

Fig. 1B



Source: http://www.physicalgeography.net/fundamentals/images/andagoya_Af.jpg

- (a) (i) Describe the temperature of Andagoya, Colombia. [3]
- Uniformly distributed throughout the year
 - High mean annual temperature of 27.16°C (27.2°C)
 - Small temperature range of 1°C
 - The highest temperature is 28°C in March and April
 - The rest of the months have similar temperature of 27°C
- (ii) Account for the temperature described in (a)(i). [4]

- Andagoya, Colombia is located near the equator, it will not experience seasons and that is why its temperature range is small
- In addition, the sun's radiation will strike Andagoya, Colombia, at a high angle of incidence
- Before reaching the Earth's surface, the sun's radiation will pass through a smaller volume of atmosphere, therefore
- Less of the sun's radiation is absorbed and scattered, and more will reach the Earth's surface concentrating over a smaller area, resulting in high temperatures

(b) (i) Given the distribution of precipitation and the geographical location of Andagoya, Colombia, what is the most commonly occurring rain? [1]

- **Convectional rain**

3.(a) Figures 2A, 2B and 2C show 3 different weathering processes.

Fig. 2A
FREEZE-THAW ACTION

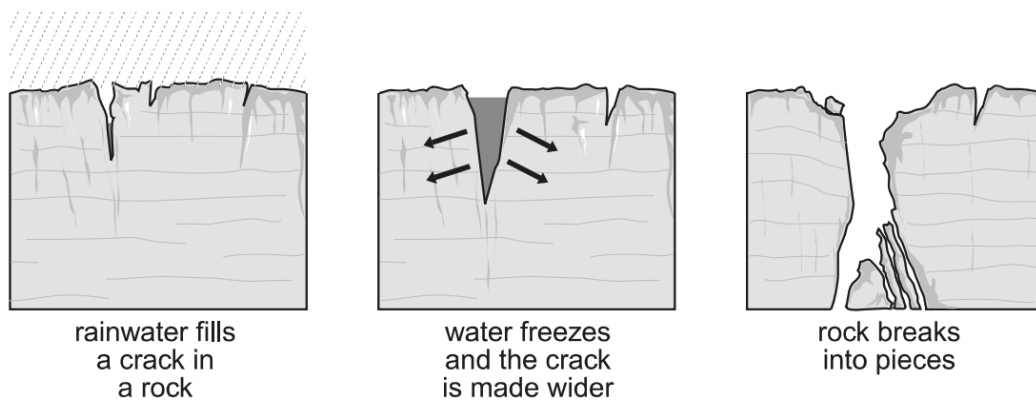


Fig. 2B

EXPANSION AND CONTRACTION

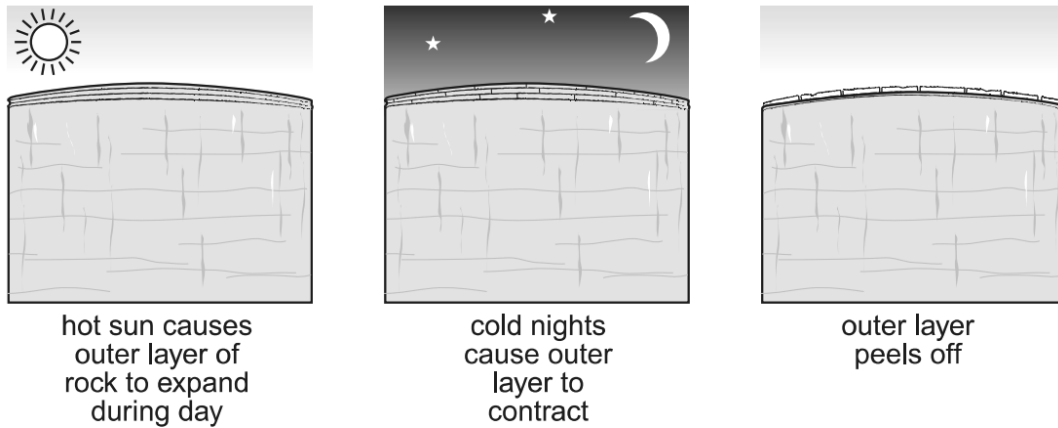
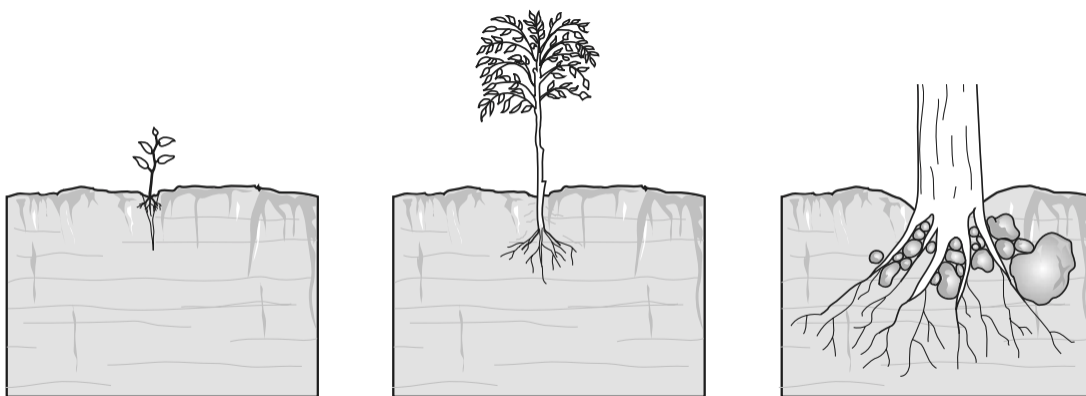


Fig. 2C

GROWTH OF ROOTS

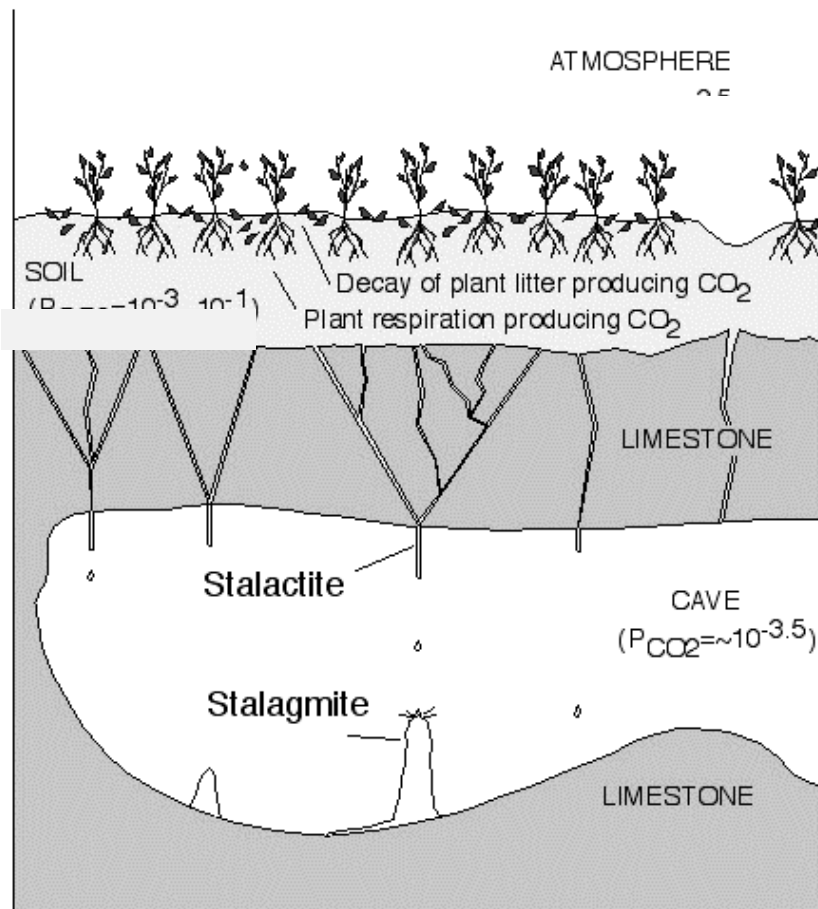


Source: May/June 2009 IGCSE Geography Exam

- (i) What is 'weathering'? [1]
- The breakdown of rock 'in-situ' into smaller sediments / rock is broken down physically or chemically as a result of atmospheric conditions.
- (ii) Which weathering process is most likely to occur in [2]
- A: Tropical deserts
- B: Tropical rainforests?
- A: Thermal expansion and contraction
 - B: Growth of roots

(b) Figure 3 shows a limestone cave.

Fig. 3

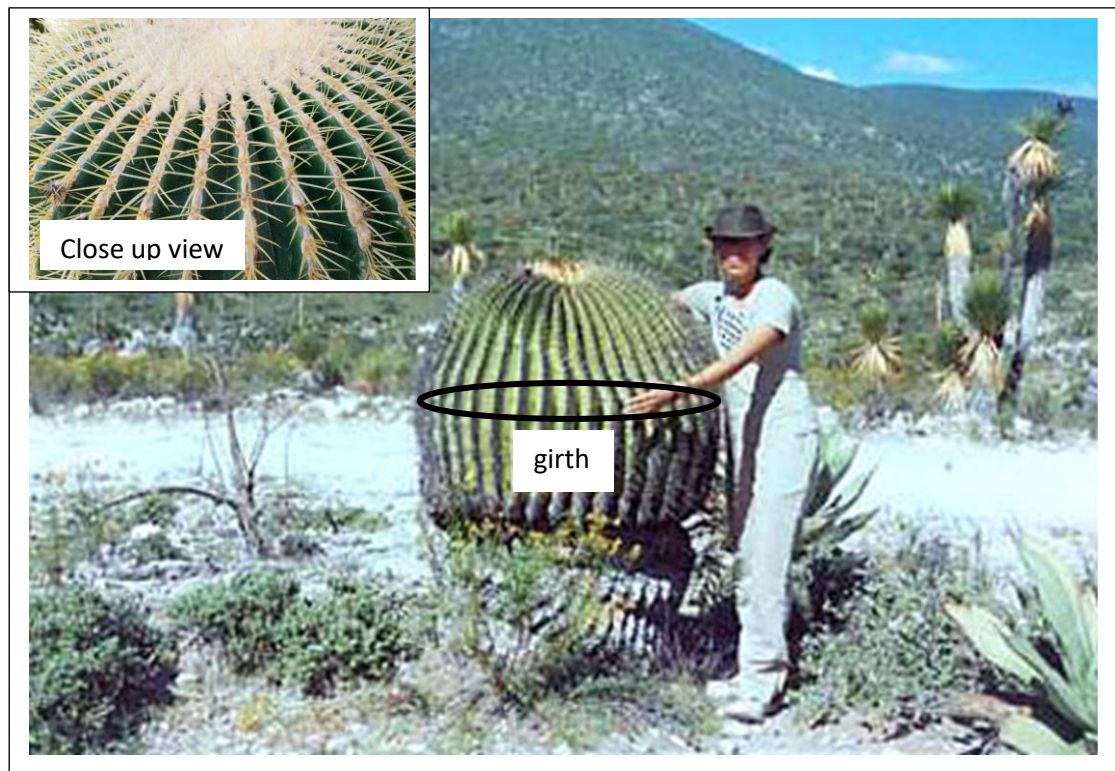


Source: <http://www.gly.uga.edu/railsback/1121KarstSpeleoPptn.jpeg>

- (i) What type of rock is limestone categorised as? – **NOT TESTED IN 2023 EYE** [1]
- **Sedimentary rock**
- (ii) State the type of weathering process that caused the formation of stalactite and stalagmite. – **NOT TESTED IN 2023 EYE** [1]
- **Solution/ Carbonation**
- (iii) Explain how stalactite and stalagmite are formed. – **NOT TESTED IN 2023** [3]
- When rain falls, it reacts with the carbon dioxide produced by plant litter and through plant respiration, in the soil, forming carbonic acid.
 - The carbonic acid will react with limestone, which is soluble in carbonic acid and forms calcium carbonate solution.
 - The calcium carbonate solution will drip through the ground, into the cave and over time, forming stalactite and stalagmite.

4. Figures 4A and 4B show two different types of natural vegetation.

Fig. 4A



Source: <http://www.mexicolore.co.uk>, Inset close up: <http://www.picdrome.com>

Fig. 4B

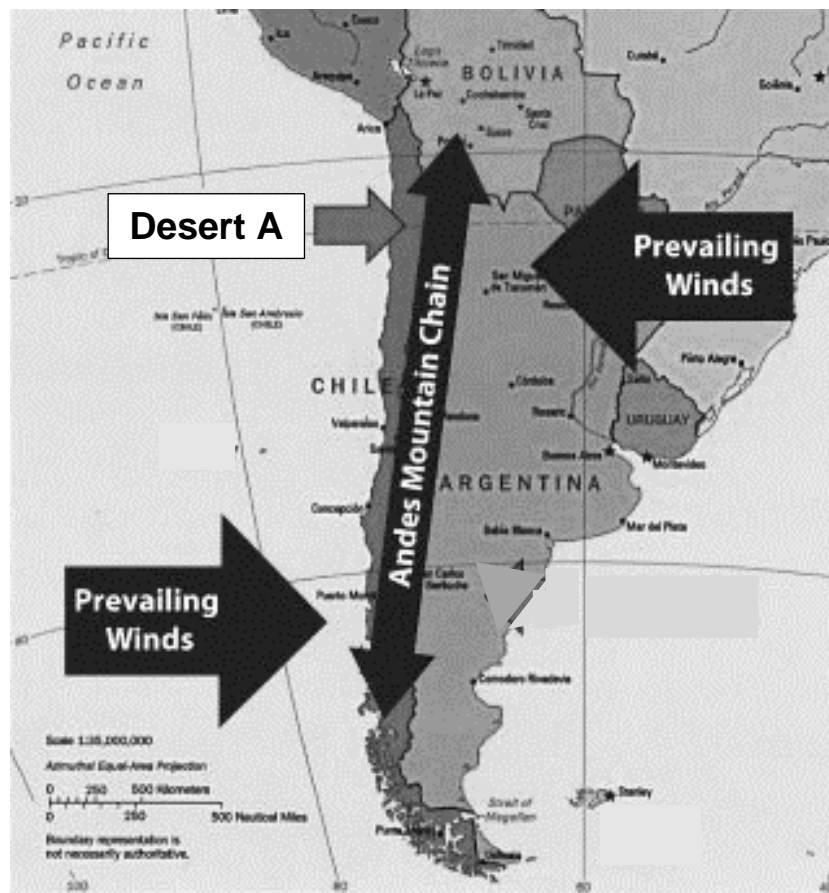


Source: <https://florafaunaweb.nparks.gov.sg>

- (a) Identify the types of climatic environment where you can find the plant species in Figures 4A and 4B. (Label your answer with the figure number.) [2]
- Figure 4A – Arid Tropical Environment
 - Figure 4B – Humid Tropical Environment
- (b) List **two** physical differences between the plant species in Figures 4A and 4B. [2]
- Plant species in Figure 4A has needle-like leaves while plant species in Figure 4B has large leaves
 - Plant species in Figure 4A has a swollen stem while plant species in Figure 4B has a thin stem
- (c) (i) Describe the climatic conditions in which plant species in Figure 4A is found and explain why the plant species in Figure 4A looks the way it does. [2]
- Plant species in Figure 4A is found in an environment with high temperatures and very low (and sometimes, no) precipitation
 - Adapts to high temperatures by reducing its leaf size so as to reduce water loss through evapotranspiration
 - Adapts to low precipitation by developing a swollen stem which can store water when rain comes (which is infrequent) and use it during the dry periods
- (ii) Describe the climatic conditions in which plant species in Figure 4B is found and explain why the plant species in Figure 4B looks the way it does. [2]
- Plant species in Figure 4B is found in an environment with low light and high precipitation
 - Adapts to low light by developing large leaves so that the leaves can absorb maximum amount of sunlight that reaches the forest floor
 - Adapts to high precipitation by developing waxy leaves with drip tips so that excess water can easily flow off the surface of the leaves

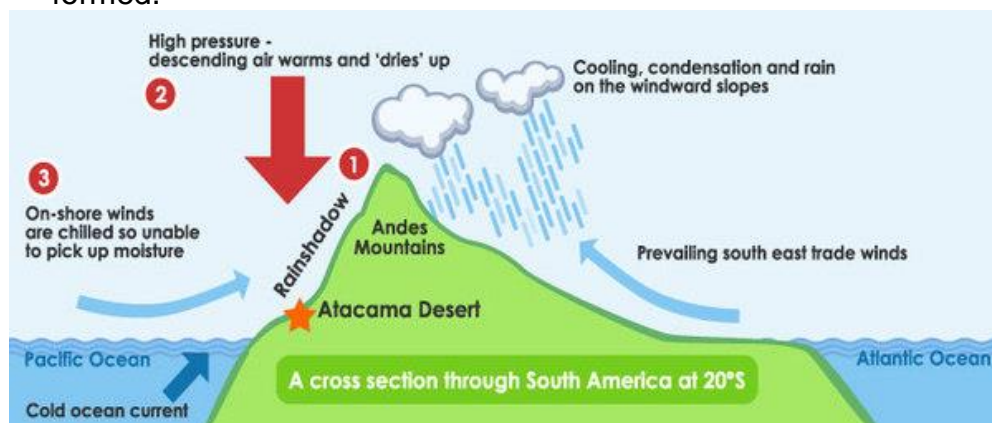
5.(a) Figure 5 shows the geographical locations of two deserts.

Fig. 5



Source: <https://www.pmfias.com/desert-climate-hot-desert-climate-mid-latitude-desert-climate/>

- (i) Identify Desert A. [1]
 - Atacama desert
- (ii) With the use of a well-labelled diagram, explain how Desert A is formed. [4]



- The prevailing south east trade winds blow the warm, moist air over the Atlantic Ocean towards the Andes Mountains

- This forces the warm moist air to rise along the slopes of the mountain, cools, condenses and forms clouds which then rains on the windward side upon saturation.
- By the time the air is blown to the leeward side of the Andes Mountain, it is lacking in moisture, cools and is of high pressure.
- The cool dry air will then descend on the leeward side of the Andes Mountain, as it descends, it warms and 'dries' up creating Atacama Desert at the foot of the mountain.

(b) Figure 6 shows a physical feature in a desert.

Fig. 6



Source: <https://science.howstuffworks.com/environmental/earth/geology/>

Describe how wind would have shaped the physical feature. – **NOT TESTED IN 2023 EYE**

[3]

- Wind in the desert carries small particles of sediments
- When grasses or shrubs obstruct the wind, it begins to deposit the sediments it is carrying and this will initiate the accumulation of sand into dunes.
- Wind blows sand towards the obstruction via saltation, and these sand gets lodged into the obstruction and gradually, a mound will grow on the obstruction.

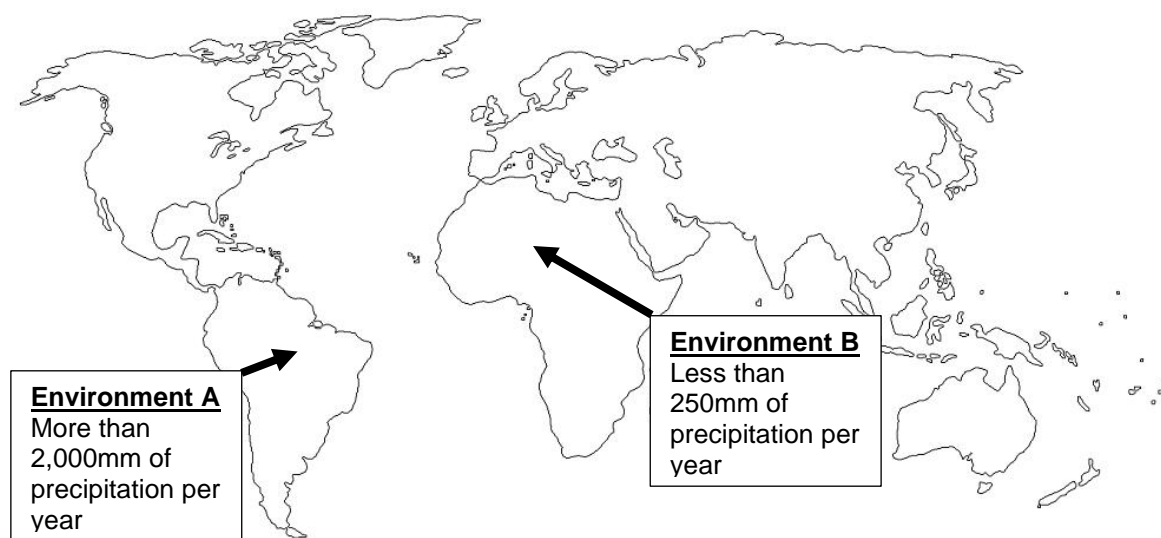
Section C: (8 marks)

Open-Response Question

Answer the question on the **Writing Paper** provided.

6. Figure 7 shows the total annual precipitation of two environments.

Fig. 7



Source: <http://eduteach.co/wp-content/uploads/2018/06/world-map-black-an-white-luxury-world-map-black-and-white-image-picture-of-world-map-in-black-and-of-world-map-black-an-white.jpg>

With reference to Figure 7, explain how the spatial locations of the two environments impact the total annual precipitation received. [8]

Level of Response Rubrics for Open-Response Question

	AO1 Knowledge/ Understanding	AO2 Application/Analysis	AO3 Expression
Level 1 (1-3m)	No or little relevant knowledge and/or understanding, which is largely superficial or of marginal relevance; inappropriate case studies	Little attempt at application/analysis	Poor terminology, difficult to understand
Level 2 (4-6m)	Relevant knowledge and understanding but with some omissions, case studies and examples well chosen	Some attempt at application; competent answer although not well-developed and tends to be descriptive	Acceptable terminology Some forms of organisation Can follow argument
Level 3 (7-8m)	Accurate, specific and well detailed knowledge and good understanding; examples and case studies are well chosen and developed	Detailed application; well-developed answer that cover most or all aspects of question	Geographical terminology used appropriately Organised responses

END OF PAPER